

Appln. No. 10/821,684

Attorney Doct et No. 10541-1973

II. Remarks

Reconsideration and re-examination of this application in view of the above amendments and the following remarks is herein respectfully requested.

Claims 1-27 remain pending.

Claim Objections

Claims 28 and 29 were cancelled. Accordingly, applicants respectfully request withdrawal of the claim objections.

Claim Rejections - 35 U.S.C. §102(b)

Claims 1-9, and 22-27 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,051,942 to French et al. (French).

Claims 1 and 22 include a plurality of positive side switch circuits in electrical parallel connection, wherein each positive side switch circuit is electrically connected to a positive side of a machine coil of the plurality of machine coils of one of the plurality of phases. French teaches multiple switch circuits. However, *each switch circuit is in electrical communication with a separate phase* of the electrical machine. Switch circuit 35A acts as a buck circuit for phase A and 36A acts as a boost circuit for phase A. Similarly, 35B and 36B operate as buck and boost circuits for phase B. Accordingly, French does not teach *a plurality of sets of positive side switch circuits where each positive side switch circuit of a set is in communication with a machine coil of the*

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same phase. Since the cited reference does not teach sets of positive side switch circuits in communication with machine coils of the same phase, the cited reference does not anticipate the present invention.

Claims 2-9 and 23-27 depend from claims 1 or 22 and are, therefore, patentable for at least the same reasons as given above in support of claims 1 and 22.

Claims 1-4, 22, and 27-29 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,708,576 to Jones et al. (Jones).

Similar to French, Jones teaches a plurality buck and boost circuits where each buck and boost circuit is in communication with a separate phase of the switched reluctance machine. For Jones, this is clearly indicated in that WA indicates the machine coil for phase A, while WN indicates the phase coil for phase N. (FIG. 3, column 2, lines 54-60). Since the cited reference does not teach sets of positive side switch circuits in communication with machine coils of the same phase, the cited reference does not anticipate the present invention.

Claims 2-4, 22, and 27-29 depend from claims 1 or 22 and are, therefore, patentable for at least the same reasons as given above in support of claims 1 and 22.

Claims 1, 12, 19, and 22 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,078,122 to Tang et al. (Tang).

Tang also teaches a positive and negative side switch circuit for each phase of the machine. For example, a single positive and negative side switch circuit is shown for each phase in FIG. 9. As further discussed in column 10,

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each positive side and negative side switch circuit controls a different phase of the machine. Therefore, the cited reference does not teach or suggest sets of positive side switch circuits in communication with machine coils of the same phase. Accordingly, Tang does not anticipate the present invention as provided in claims 1 and 22.

Claims 12 and 19 depend from claim 1 and are, therefore, patentable for at least the same reasons as given above in support of claim 1.

Claims 1, 12-15, and 22 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,307,345 to Lewis (Lewis).

Lewis teaches a stepper motor including one machine coil per phase. (Col. 5, Ln. 38-52) Contrary to the present application, Lewis does not teach a plurality of machine coils for each phase. Therefore, Lewis does not teach the present invention as provided in claims 1 and 22.

Claims 12-15 depend from claim 1 and are, therefore, patentable for at least the same reasons as given above in support of claim 1. Accordingly, applicants respectfully request withdrawal of the rejections under 35 U.S.C. §102.

Claim Rejections - 35 U.S.C. §103(a)

Claims 5, 6, 9-11, 23 and 24 were rejected under 35 U.S.C. §103(a) as being unpatentable over Jones in view of French. However, claims 5, 6, 9-11, 23 and 24 depend from claim 1 or 22 and are, therefore, patentable for the same reasons as given above in support of claims 1 and 22.

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Claims 16-18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Lewis in view of French. However, claims 16-18 depend from claim 1 and are, therefore, patentable for at least the same reasons given above in support of claim 1.

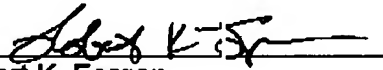
Claims 20-21 were rejected under 35 U.S.C. §103(a) as being unpatentable over Tang in view of Jones. However, claims 20-21 depend from claim 1 and are, therefore, patentable for at least the same reasons given above in support of claim 1. Accordingly, applicants respectfully request withdrawal of the rejections under 35 U.S.C. §103(a).

Conclusion

In view of the above amendments and remarks, it is respectfully submitted that the present form of the claims are patentably distinguishable over the art of record and that this application is now in condition for allowance. Such action is respectfully requested.

Respectfully submitted by,

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